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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,982	01/14/2004	Susumu Inatsugu	MAT-8498US	3712
23122	7590	01/10/2006	EXAMINER	
RATNERPRESTIA P O BOX 980 VALLEY FORGE, PA 19482-0980			CAO, HUEDUNG X	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<p>Application No.</p> <p align="center">10/756,982</p>	<p>Applicant(s)</p> <p align="center">INATSUGU ET AL.</p>	
	<p>Examiner</p> <p align="center">Huedung X. Cao</p>	<p>Art Unit</p> <p align="center">2821</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-8 and 11-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 8 and 14 is/are allowed.
- 6) ☒ Claim(s) 5-7 and 11-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

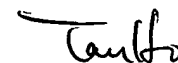
**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.



**TAN HO**  
**PRIMARY EXAMINER**

**Attachment(s)**

- |                                                                                                    |                                                                             |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____                                                |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>04/01/04</u> .                                                            | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 5-7 are rejected under 35 U.S.C. 102(e) as being anticipated by SAITO (US 6456246 B2).

As per claim 5, Saito teaches “an antenna”, comprising:

a flat-plate ground plane (Saito, figure 1A, ground conductor 3); a first antenna element with its one end connected to a feeding point and its intermediate portion folded by a plurality of times, which is extended upward from said ground plane (Saito, figure 3A, first conductor 5L; column 5, lines 15-25); and a second antenna element with its one end connected to the other end of said first antenna and with the other end thereof connected to said ground plane, which has an intermediate portion extended upward from said ground plane (Saito, figure 3A, second conductor 5R; column 5, lines 15-25); wherein said first and second antenna elements each have an electrical length of over  $\frac{1}{4}$  wavelength relative to a frequency band of said current (Saito, column 1, lines 25-32); a substrate extended upward from said ground plane (Saito, figure 3A, substrate 15),

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wherein the intermediate portion of said second antenna element is disposed in a symmetrical relation with the intermediate portion of said first antenna element (Saito, the symmetrical relation first and second conductors 5L, 5R; figures 3A,3B); the intermediate portion of said first antenna element and the intermediate portion of said second antenna element are arranged in symmetrically opposed to each other" (Saito, the symmetrical relation first and second conductors 5L, 5R; figures 3A, 3B), wherein the intermediate portion of said first antenna element is arranged on one surface of said substrate and the intermediate portion of said second antenna element is arranged on the other surface opposed to the substrate surface where the intermediate portion of said first antenna element is disposed (Saito, figure 3A, first and second conductors 5L, 5R on the surfaces of substrate 15).

Claim 6 adds into claim 5, further comprising: a conductive plate, wherein said conductive plate is arranged on one surface of said substrate being parallel to said ground plane, and the other end of said first antenna element and one end of said second antenna element are connected to each other via said conductive plate (Saito, figures 4C and 10C, conductor 6a on substrate 22).

Claim 7 adds into claim 6, wherein said first antenna element and said second antenna element are formed of metal plates which are integral with said conductive plate (Saito, figures 4C and 10C, conductor 6a; column 5, lines 15-26).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over SAITO (US 6456246 B2) in view of HAI et al. (US 5,481,271).

As per claim 11, and similar claims 12-13, wherein said first and second antenna elements each have an electrical length of  $5/4$  wavelength relative to said frequency band of said current which Saito does not explicitly disclose. However, Hai teaches such antenna elements each have an electrical length of  $5/4$  wavelength is widely used in the art (Hai, see abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Saito's antenna system with antenna elements each have an electrical length of  $5/4$  wavelength, as taught by Hai doing so it would improve the transmission range of the transmission distance.

***Allowable Subject Matter***

5. Claims 8, and 14 are allowed.

The following is an examiner's statement of reasons for allowance: a plurality of parasitic antenna elements having an intermediate portion same in shape as the intermediate portion of said first antenna element, wherein each of said parasitic antenna elements are arranged in parallel relation to the surface where said first

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antenna element and said second antenna element are disposed, and one end of said parasitic antenna element is connected to said ground plane with the other end opened.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. The following is a statement of reasons for the indication of allowable subject matter: the Prior Arts fail to teach the features: a plurality of parasitic antenna elements having an intermediate portion same in shape as the intermediate portion of said first antenna element, wherein each of said parasitic antenna elements are arranged in parallel relation to the surface where said first antenna element and said second antenna element are disposed, and one end of said parasitic antenna element is connected to said ground plane with the other end opened.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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***Inquiries***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huedung Cao whose telephone number is (571) 272-1939.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Huedung Cao  
Patent Examiner

  
**TAN HO**  
**PRIMARY EXAMINER**